

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently amended) An isolated structural protein of adeno-associated virus 2, which comprises at least one mutation, wherein the mutated structural protein comprises one or more amino acid insertion(s) which bring(s) about an increase in the infectivity of AAV, wherein the one or more insertion(s) is/are located directly adjacent to ~~at least one amino acid in the sequence selected from the group consisting of YKQIS SQSGA (SEQ ID NO: 2), YLTLN NGSQA (SEQ ID NO: 3), YYLSR TNTPS (SEQ ID NO: 4), EEKFF PQSGV (SEQ ID NO: 5), NPVAT EQYGS (SEQ ID NO: 6),~~ and after the amino acid “N” in LQRGN RQAAT (SEQ ID NO: 7), and NVDFV VDTNG (SEQ ID NO: 8), and wherein said mutated structural protein is capable of particle formation.

2-30. (Cancelled)

31. (Previously presented) The structural protein according to Claim 1, wherein the mutation causes a change in interaction of the structural protein with a cell membrane receptor.

32. (Previously presented) The structural protein according to Claim 31, wherein the cell membrane receptor is a glycoprotein of about 150 kD and/or a heparan sulphate proteoglycan.

33-34. (Cancelled)

35. (Previously presented) The structural protein according to Claim 1, wherein

the one or more amino acid insertions comprise at least one of a cell membrane receptor ligand, a Rep protein or a Rep peptide, or an immunosuppressive protein or an immunosuppressive peptide.

36. (Previously presented) The structural protein according to Claim 35, wherein the ligand is selected from an integrin, a cytokine, a receptor-binding domain of a cytokine, a receptor-binding domain of an integrin, a receptor-binding domain of a growth factor, a single-chain antibody that binds to a cell surface receptor, an antibody against cell surface structures, an antibody-binding structure, an antibody-binding epitope, a ligand which binds via its charge, a ligand that binds via the type of amino acids, a ligand that binds via its specific glycosylation, or a ligand that binds via phosphorylation to cell surface molecules.

37. (Previously presented) The structural protein according to Claim 1, wherein the structural protein is a component of an AAV particle.

38. (Previously presented) The structural protein of Claim 37, wherein the structural protein is a component of an AAV capsid.

39. (Currently Amended) An isolated nucleic acid coding for a structural protein of ~~of~~ adeno-associated virus 2 comprising at least one mutation, wherein the mutated structural protein comprises one or more amino acid insertion(s) which bring(s) about an increase in the infectivity of AAV, wherein the one or more insertion(s) is/are located directly adjacent to ~~at least one amino acid in a sequence selected from the group consisting of~~ YKQIS SQSGA (SEQ ID NO: 2), YLTLN NGSQA (SEQ ID NO: 3), ~~YYLSR~~ TNTPS (SEQ ID NO: 4), ~~EEKFF~~ PQSGV (SEQ ID NO: 5), ~~NPVAT~~ EQYGS (SEQ ID NO: 6), and after the amino acid "N" in LQRGN RQAAT (SEQ ID NO: 7), and

~~NVDFT VDTNG (SEQ ID NO: 8)~~, and wherein said mutated structural protein is capable of particle formation.

40. (Previously presented) An isolated cell comprising a nucleic acid of Claim 39.

41. (Previously presented) A process for the preparation of a mutated structural protein of adeno-associated virus 2, the method comprising cultivating a cell comprising a nucleic acid coding for a structural protein of adeno-associated virus 2 comprising at least one mutation, wherein the mutated structural protein comprises one or more amino acid insertion(s) which bring(s) about an increase in the infectivity of AAV, wherein the one or more insertion(s) is/are located directly adjacent to at least one amino acid in a sequence selected from the group consisting of YKQIS SQSGA (SEQ ID NO: 2), YLTLN NGSQA (SEQ ID NO: 3), YYLSR TNTPS (SEQ ID NO: 4), EEKFF PQSGV (SEQ ID NO: 5), NPVAT EQYGS (SEQ ID NO: 6), LQRGN RQAAT (SEQ ID NO: 7), and NVDFT VDTNG (SEQ ID NO: 8), and wherein said mutated structural protein is capable of particle formation; and isolating the expressed mutated structural protein.

42. (Previously presented) A method for altering the tropism of AAV2, the method comprising cultivating an isolated cell which comprises an AAV2 coding for a mutated structural protein of wherein the mutated structural protein comprises one or more amino acid insertion(s) which bring(s) about an increase in the infectivity of AAV, wherein the one or more insertion(s) is/are located directly adjacent to at least one amino acid in a sequence selected from the group consisting of YKQIS SQSGA (SEQ ID NO: 2), YLTLN NGSQA (SEQ ID NO: 3), YYLSR TNTPS (SEQ ID NO: 4), EEKFF PQSGV (SEQ ID NO: 5), NPVAT EQYGS (SEQ ID NO: 6), LQRGN RQAAT (SEQ ID NO: 7), and NVDFT VDTNG (SEQ ID NO: 8), and wherein said mutated structural

protein is capable of particle formation; and isolating the AAV2 particle produced by the cell.

43. (Cancelled).

44. (New) An isolated structural protein of adeno-associated virus 2, which comprises one or more amino acid insertion(s) located directly adjacent to at least one amino acid in the sequence selected from the group consisting of YKQIS SQSGA (SEQ ID NO: 2), YLTLN NGSQA (SEQ ID NO: 3), YYLSR TNTPS (SEQ ID NO: 4), EEKFF PQSGV (SEQ ID NO: 5), NPVAT EQYGS (SEQ ID NO: 6), LQRGN RQAAT (SEQ ID NO: 7), and NVDFT VDTNG (SEQ ID NO: 8).

45. (New) The structural protein according to Claim 44, wherein the insertion(s) is/are located after the amino acid “N” in SEQ ID NO: 7.

46. (New) The structural protein according to Claim 44, wherein the insertion(s) comprise at least one of a cell membrane receptor ligand, a Rep protein or a Rep peptide, or an immunosuppressive protein or an immunosuppressive peptide.

47. (New) The structural protein according to Claim 46, wherein the ligand is selected from an integrin, a cytokine, a receptor-binding domain of a cytokine, a receptor-binding domain of an integrin, a receptor-binding domain of a growth factor, a single-chain antibody that binds to a cell surface receptor, an antibody against cell surface structures, an antibody-binding structure, an antibody-binding epitope, a ligand which binds via its charge, a ligand that binds via the type of amino acids, a ligand that binds via its specific glycosylation, or a ligand that binds via phosphorylation to cell surface

molecules.

48. (New) An isolated nucleic acid coding for a structural protein of of adeno-associated virus 2 comprising one or more amino acid insertion(s) located directly adjacent to at least one amino acid in a sequence selected from the group consisting of YKQIS SQSGA (SEQ ID NO: 2), YLTLN NGSQA (SEQ ID NO: 3), YYLSR TNTPS (SEQ ID NO: 4), EEKFF PQSGV (SEQ ID NO: 5), NPVAT EQYGS (SEQ ID NO: 6), LQRGB RQAAT (SEQ ID NO: 7), and NVDFV VDTNG (SEQ ID NO: 8).

49. (New) The isolated nucleic acid according to Claim 48, wherein the insertion(s) is/are located after the amino acid "N" in SEQ ID NO: 7.

50. (New) An isolated cell comprising a nucleic acid of Claim 48 or 49.

51. (New) A process for the preparation of a mutated structural protein of adeno-associated virus 2, the method comprising cultivating a cell comprising a nucleic acid coding for a structural protein of adeno-associated virus 2 comprising one or more amino acid insertion(s) located directly adjacent to at least one amino acid in a sequence selected from the group consisting of YKQIS SQSGA (SEQ ID NO: 2), YLTLN NGSQA (SEQ ID NO: 3), YYLSR TNTPS (SEQ ID NO: 4), EEKFF PQSGV (SEQ ID NO: 5), NPVAT EQYGS (SEQ ID NO: 6), LQRGB RQAAT (SEQ ID NO: 7), and NVDFV VDTNG (SEQ ID NO: 8); and isolating the expressed mutated structural protein.

52. (New) The process according to Claim 51, wherein the insertion(s) is/are located after the amino acid "N" in SEQ ID NO: 7.